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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)
280/102

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]

on _____

Signature _____

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Application Number	Filed
10/784,472	February 24, 2004
First Named Inventor	
David BRADY, et al.	
Art Unit	**Examiner**
2622	U.A. Khan

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☑ attorney or agent of record.
Registration number 35,292

☐ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____

Signature

Susan S. Morse
Typed or printed name

703-207-0008
Telephone number

July 22, 2011
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

☑ *Total of one forms are submitted.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of			
David BRADY, et al.		Art Unit:	2622
Serial No.	10/784,472	Examiner:	Usman A. Khan
Filed:	February 24, 2004	*Confirmation No.*	*1758*
For:	FOCAL PLANE CODING FOR DIGITAL IMAGING	Attorney Docket No.	280/102

REASONS IN SUPPORT OF PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop: BOX AF
Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

INTRODUCTORY COMMENTS

In response to the Office Action Made Final mailed February 22, 2011, the period for response having been extended two (2) months to July 22, 2011, the following is respectfully submitted in connection with the above-identified application:

Claims 1-40 are currently pending in the subject application. Claims 1, 12, and 30 are independent.

A. Introduction

In the outstanding Office Action Made Final, all of the claims were rejected in view of the U.S. Patent No. 7,009,652 to Tanida et al. ("the Tanida et al. reference") in view of U.S. Patent No. 5,355,222 to Heller et al. ("the Heller et al. reference"), either by this combination alone or in combination with additional secondary references. In particular, independent claim 30 was rejected under § 102(e) over the Tanida et al. reference in view of the Heller et al. reference, and independent claims 1 and 12 were rejected under 35 U.S.C. § 103(a) over the Tanida et al. reference in view of U.S. Patent No. 7,003,177 to Mendlovic et al. ("the Mendlovic et al. reference") further in view of Heller. The remaining claims depend

from respective ones of these independent claims, and were rejected under the same grounds or in view of additional secondary references.

B. Errors and Deficiencies in the Outstanding Rejections

i. Rejection of Claim 30

Claim 30 recites, in part, "each image blocking portion being smaller than a detector," "the plurality of multiple image blocking portions being between the lens and the plurality of detectors," and that "an output of the plurality of detectors for each lens together representing an input image multiplied by a selected transform matrix."

The Office action notes that the Tanida et al. reference fails to teach image blocking portion being smaller than a detector, and relies on the Heller et al. reference as teaching that the pixels are sub-pixels.[1] The Applicant respectfully disagrees for at least the reasons set forth below.

a. References not properly combinable

It is submitted that these references are not properly combinable. The Tanida et al. reference is directed to an imaging apparatus, while the Heller et al. reference is directed to an optical position detecting device, i.e., the Heller et al. reference does **not image** anything, but merely detects presence or absence of light output from an optical transmitter attached to a moving object. The reasons for combining provided in the Office action regarding detection set forth in the Heller et al. reference would not apply to the imaging system as in the Tanida et al. reference. One of skill in the art would not be motivated to combine teachings regarding such optical position detecting devices with imaging systems.

The Office Action made Final asserts that these references are analogous since the Heller et al. reference teaches "that a relatively small number of small sensors, having high signal sensitivity, may be used for area location to a certain degree of resolution" and that the invention in the Heller et al. reference compensates for perspective viewing.[2] While the Heller et al. reference may be directed to analyzing light, the Heller et al. reference is not directed to imaging light.[3] In particular, the Heller et al. reference is directed to determining a

[1] Office Action made Final February 22, 2011, page 4, penultimate paragraph.
[2] Id., page 2.
[3] Image- *Physics* An optically formed duplicate, counterpart, or other representative reproduction of an object. http://www.thefreedictionary.com/image.

position of a moving target based on reflection of light output from a transmitter onto a detector array.[4] Improving the resolution of detection of a moving target in the Heller et al. reference is not reasonably pertinent to the particular problem of creating a compact, high resolution imager in the Tanida et al. reference. Therefore, it is submitted that these references are not analogous.

b. All elements not disclosed

Even assuming, *arguendo*, that the references may be combined, the combination still fails to suggest, much less disclose, all of the limitations of claim 30.

First, the Heller et al. reference discloses that apertures may be used to replace lenses in order to overcome complexity and accuracy issues associated with using lenses.[5] The Office Action made Final notes that the microlenses in the Tanida et al. reference are different from the lens noted as problematic in the Heller et al. reference.[6] However, the microlenses in the Tanida et al. reference exacerbate the problems noted in the Heller et al. reference, as microlenses are more complex and sensitive to alignment issues than individual lenses.

Second, the apertures in the Heller reference are in the aperture plane so that the field of view is limited for the corresponding sensor, i.e., each aperture corresponds to a single sensor in the Heller et al. reference. Therefore, the combination of the Heller et al. reference and the Tanida et al. reference would replace each lens of the Tanida et al. reference with the apertures of the Heller et al. reference. Thus, a pattern of these apertures would not be "substantially the same for the plurality of detectors associated with a corresponding lens" as recited in claim 30.

Third, even if the apertures of the Heller et al. reference were used with the lenses in the Tanida et al. reference, there is no suggestion or teaching in the combination as to where to place the apertures relative to the lenses. In particular, as the aperture plane in the Tanida et al. reference is the lens plane[7], at most, one aperture would be placed on each lens, i.e., not

[4] The Heller et al. reference, Abstract, col. 2, lines 61-68.
[5] The Heller et al. reference, col. 1, line 66 to col. 2, line 2.
[6] Office Action made Final mailed February 22, 2011, paragraph spanning pages 2-3.
[7] The Tanida et al. reference, FIGS. 1 and 2.

between the lenses and the detectors, as recited in claim 30.[8] Such an arrangement would result in the aperture and, thus, the lens, being associated either with a single sensor *or* the aperture and, thus, the lens, being associated with the plurality of detectors, which would not provide sub-pixel resolution. Neither scenario would provide an image output by the plurality of detectors for that lens being multiplied by a transform matrix, as recited in claim 30.

Finally, even assuming a plurality of apertures of the Heller et al. reference are placed between each lens and corresponding detectors of the Tanida et al. reference such that an aperture corresponds to a single detector, there is no suggestion or teaching in the combination that a pattern of these apertures would not be "substantially the same for the plurality of detectors associated with a corresponding lens" as recited in claim 30.

Therefore, it is submitted that neither the Tanida et al. reference nor the Heller et al. reference, either alone or in combination, suggest, much less disclose, all of the limitations recited in claim 30. Therefore, it is respectfully requested that this rejection be withdrawn.

i. Rejection of Claims 1 and 12

Claims 1 and 12 recite, instead of image blocking portions that are smaller than a detector, focal plane coding elements for each detector, each having multiple sub-pixel resolution elements. Otherwise, claims 1 and 12 recite all of the limitations relied on above as distinguishing claim 30 from the combination of the Tanida and Heller et al. references. In particular, claims 1 and 12 recite that the focal plane coding elements are (1) between the lenses and the detectors, (2) have patterns that are substantially the same for the plurality of detectors associated with a corresponding lens, and (3) an output of the plurality of detectors for each lens together representing an input image multiplied by a selected transform matrix. The additional secondary reference, i.e., the Mendlovic et al. reference, fails to provide all of these missing teachings. In particular, even assuming that the pattern of slits of the Mendlovic et al. reference constitutes a pattern of sub-pixel resolution elements, each detector in the plurality of detectors would be imaging a different section of the pattern of slits, such that the pattern of the multiple sub-pixel resolution elements would **not** be

[8] "the plurality of multiple image blocking portions being between the lens and the plurality of detectors"

substantially for the plurality of detectors associated with a corresponding lens, as recited in claims 1 and 12.

Therefore, it is respectfully submitted that this combination fails to suggest, much less disclose, all of the limitations recited in claims 1 and 12. It is respectfully requested that this rejection be withdrawn.

iii. Dependent Claims

The remaining secondary references fail to provide the teachings noted above as missing. The remaining dependent claims depend from various ones independent claims 1, 12, and 30. Therefore, all of the claims are believed to be allowable for at least the reasons set forth above, and it is requested that all rejection be reconsidered and withdrawn.

C. Conclusion

In view of the foregoing, applicants respectfully request a pre-appeal brief review of each of the outstanding rejections

Respectfully submitted,
LEE & MORSE, P.C.

Date: July 22, 2011

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ATTACHMENTS:
PETITION FOR TWO MONTH EXTENSION
NOTICE OF APPEAL

PETITION and
DEPOSIT ACCOUNT CHARGE AUTHORIZATION

This document and any concurrently filed papers are believed to be timely. Should any extension of the term be required, applicant hereby petitions the Director for such extension and requests that any applicable petition fee be charged to Deposit Account No. 50-1645.

If fee payment is enclosed, this amount is believed to be correct. However, the Director is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-1645.

Any additional fee(s) necessary to effect the proper and timely filing of the accompanying-papers may also be charged to Deposit Account No. 50-1645.